

striæ and often confluent. In *R. bucculatus* there is no trace of striæ except adjoining the suture, and the punctures are separate.

Rhysodes anguliceps, sp. n.

Niger, nitidus, parum elongatus, capitis lobis intus non emarginatis, lateraliter post oculos acute productis, supra oculos arcuate canaliculatis, elevatione mediana lata non ad loborum medium attingente; antennis longitudine mediocris; prothoracis lateribus antice valde, postice paulo, incurvatis, disco trisulcato, carinis duabus mediis latis; elytris profunde punctato-striatis, humeris non dentatis; metasterno postice impresso, non sulcato, tibiis utroque bidentatis.

♂, femoribus anticis minute dentatis; tibiis posticis apice laminato-productis.

Long. 6·5 mm.

Hab. S. India, Malabar.

Specimens of this are contained in the British Museum and in the Hope Department at Oxford. It differs from all the other species known to me by the structure of the head, of which the posterior lobes, instead of being, as usual, more or less kidney-shaped, have a circular outline interrupted only at the sides of the head, where they are rather sharply produced backwards. The curved channel above the eyes on each side is also a very distinctive character.

XV.—*Notes on Diptera from South Africa.*

By Miss GERTRUDE RICARDO.

[Concluded from vol. vi. p. 178.]

Bombylidæ.

Triplasius bivittatus, Loew, Neue Beitr. iii. p. 7 (1855); id. Dipt. Südafrik. p. 181 (1860).

Loew described the female; this is probably the male. The dividing nerve, which forms three submarginal cells by joining the second longitudinal and the anterior branch of the third longitudinal vein, is only present on one wing. The dark spots on the hind part of the wing in Loew's description are here rather reduced to dark shading of all the cross-veins, with the exception of the one spot in the apex of the first posterior cell and a faint one on the apex of

the anterior branch of the third longitudinal vein. *T. bivittatus* seems nearly allied to *Bombylius lateralis*, Fabr., the shading on the cross-veins and the three submarginal cells being the chief differences.

Group A of Loew. — Species with the greater part of the body black-haired.

a. Long-haired.

? *Bombylius lateralis*, Fabr., Syst. Antl. p. 129 (1805); Wiedem., Dipt. Exot. i. p. 165 (1821); id. Auss. zweifl. Ins. i. p. 337 (1828); Macq., Dipt. Exot. ii. (1) p. 89 (1840); Loew, Neue Beitr. iii. p. 9 (1855); id. Dipt. Südafrik. p. 182 (1860).

Two males from Cape Town (*Cregoe*).

As the specimens are gummed on a card, it is not possible to examine them thoroughly. One of the specimens has the cross-vein dividing the second posterior from the discal cell entirely wanting, evidently only an aberration.

Bombylius ornatus, Wiedem., Auss. zweifl. Ins. i. p. 345 (1828); Macq., Dipt. Exot. ii. (1) p. 91 (1840); Loew, Neue Beitr. iii. p. 9 (1855); id. Dipt. Südafrik. p. 182 (1860); Peters, Reise nach Mossambique, Zool. p. 13 (1862).

Six males and two females from Pretoria (*W. L. D.*).

Bombylius analis, Fabr., Ent. Syst. iv. p. 48 (1794); id. Syst. Antl. p. 130 (1805); Coquebert, Illustr. Icon. 85 (1799), tab. xx. fig. 5; Wiedem., Zool. Mag. ii. p. 42 (1818); id. Auss. zweifl. Ins. i. p. 331 (1828); Meigen, Syst. Besch. vii. p. 213 (1838); Loew, Dipt. Südafrik. p. 183 (1860); Karsch, Ent. Nachr. xii. p. 53 (1885).

♀. *Bombylius discoides*, Fabr., Ent. Syst. iv. p. 409; id. Syst. Antl. p. 130; Coquebert, *l. c.* fig. 6.

Bombylius thoracicus, Fabr., Syst. Antl. p. 130.

Bombylius suffusa, ♀, Walker, List Dipt. ii. p. 275.

Eleven males and thirteen females from Pretoria (*W. L. D.*) and Johannesburg (*Cregoe*). The Walker type is from Sierra Leone and is identical with the female of *analis*. In some of the male specimens the hairs on the apex of the abdomen are more or less fulvous.

Bombylius fulvionotatus, Wiedem., Zool. Mag. ii. p. 41 (1818);
id. Dipt. Exot. i. p. 162 (1821); id. Auss. zweifl. Ins. i.
p. 332 (1828).

One male from Rustenburg (*Kranz*).

Systæchus miætus, Wiedem., Dipt. Exot. i. p. 165 (1821);
id. Auss. zweifl. Ins. i. p. 336 (1828); Loew, Neue Beitr.
iii. p. 52 (1855); id. Dipt. Südafrik. p. 189 (1860).

Bombylius miætus, Wiedem., *l. c.*

Bombylius scutellaris, Wiedem., Auss. zweifl. Ins. i. p. 343.

Bombylius scutellatus, Macq., Dipt. Exot. ii. (1) p. 94.

One male and four females from Pretoria (*W. L. D.*).
Two of the females are much denuded.

Systæchus albidus, Loew, Dipt. Südafrik. p. 190 (1860);
Karsch, Ent. Nachr. xii. p. 55 (1885).

Three males from Pretoria (*W. L. D.*).

Systæchus simplex, Loew, *l. c.*; Schiner, Reise der Novara,
p. 137 (1866).

One male from Cape Town.

Systæchus?, sp. n.

One female from Angola in bad condition.

Corsomyza nigripes, Wiedem., Nov. Dipt. gen. 15 (1820);
id. Dipt. Exot. i. p. 159 (1821); id. Auss. zweifl. Ins. i.
p. 328 (1828); Loew, Dipt. Südafrik. p. 198 (1860);
Schiner, Reise der Novara, p. 139 (1866).

One male from Cape Town.

Lomatia acutangula, Loew, Dipt. Südafrik. p. 203, tab. ii.
fig. 10 (1860).

Two females from Pretoria (*W. L. D.*).

Lomatia pictipennis, Wiedem., Auss. zweifl. Ins. i. p. 302
(1828); *acq.*, Dipt. Exot. ii. (1) p. 62 (1840); Loew,
Dipt. Südafrik. p. 205, tab. ii. fig. 12 (1860).

Anthrax pictipennis, Wiedem., *l. c.*

Anisotania centralis, Macq., Dipt. Exot. ii. (1) p. 82.

Anthrax aurata, Macq., *l. c.* Suppl. 1, p. 111.

Two males and one female from Namaqualand (*Cochrane*);
Pretoria (*Zutrzenka*); Johannesburg.

Lomatia? liturata, Loew, Dipt. Südafrik. p. 205, tab. ii. fig. 13 (1860).

Two males from Barberton (*W. L. D.*; *Rendall*).

These are labelled thus with a query by Osten Sacken (1895); they are in too poor condition to identify with certainty.

Lomatia nigrescens, sp. n.

Two males from Pretoria (*W. L. D.*).

Belongs to Division III. of Loew, species with clear wings, and is allied to *L. tenera*, Loew (Dipt. Südafrik. p. 208).

Black, with black hairs on the face and white pubescence on the thorax and abdomen.

Face wholly black with black hairs, with the exception of a small tuft of white hairs between the antennæ. Eyes subcontiguous. Antennæ with black pubescence. Thorax with yellowish hairs on the anterior border, sides and upper parts of breast, with scattered white hairs on the dorsum and scutellum and on the upper surface of the abdomen, and tufts of white hairs on the sides of the latter, those on the last segments black. Underside with scattered long white hairs. Legs with black pubescence. Wings yellow at extreme base, the auxiliary and first longitudinal vein yellow, the others brown; the small cross-vein situated on the last third of the discal cell; the first posterior cell nearly the same width throughout.

Length 7 millim.

Type (male), Pretoria (*W. L. D.*).

Anthrax fulvipes, Loew, Dipt. Südafrik. p. 210, tab. ii. fig. 14 (1860).

One male from Pretoria (*W. L. D.*).

Argyromæba spectabilis, Loew, Dipt. Südafrik. p. 213 (1860); Karsch, Ent. Nachr. xii. p. 55 (1885).

Anthrax spectabilis, Loew, *l. c.*

? *Anthrax pithecius*, Fabr., Syst. Antl. p. 122; Wiedem., Dipt. Exot. i. p. 125; id. Auss. zweifl. Ins. i. p. 363.

? *Anthrax confusemaculatus*, Macq., Dipt. Exot. Suppl. 5, p. 74, tab. iii. fig. 9.

One male from Pienaaers River (*W. L. D.*); one ? male from Natal.

EXOPROSOPA, Macq.

The figures of the *Exoprosopa* species in Table II. of Loew's Dipt. Südafrik. are incorrectly given in the letterpress in many instances, and should stand thus :—

- E. maculosa*, fig. 42.
E. venosa, fig. 41.
E. balioptera, fig. 40.
E. rasa, fig. 39.
E. angulata, fig. 37.
E. umbrosa, fig. 36.
E. corvina, fig. 35.
E. reticulata, fig. 34.

I have followed the grouping of the species given by Loew, as forming a convenient classification.

Division I.

- B. Wings obliquely bordered with black on the anterior half and the posterior half clear.

Exoprosopa dimidiata, Macq., Dipt. Exot. Suppl. 1, p. 107, tab. ix. fig. 11 (1846); Loew, Dipt. Südafrik. p. 225 (1860).

Four females from Pretoria (*W. L. D.*) and Barberton (*Rendall*).

These agree with Loew's description, with the exception that the colour of the first two joints of the antennæ and of the legs is more reddish brown than black.

Exoprosopa eluta, Loew, Dipt. Südafrik. p. 227, tab. ii. fig. 25 (1860).

Eight males and three females from Pretoria (*W. L. D.*) and Warm Baths, Waterberg.

In some of the specimens the shading of the wing is very faint when it reaches the second basal cell; in one specimen there is an extra cross-vein on the basal half of the first posterior cell in one wing only; in another the stump of a vein is emitted into the discal cell from the angle of the cross-vein which divides it from the third posterior cell. The third joint of the antennæ (wanting in Loew's type) is the same colour as the others.

Exoprosopa parva, sp. n.

Two males and two females from Pretoria and Pienaars River (*W. L. D.*).

Black, with red face, scutellum, and sides of abdomen.

Face black in the centre, with long white hairs and yellowish scaly hairs; forehead black, with black pubescence and yellowish scaly hairs. Antennæ black, the first two joints with black hairs, thickest on the lower side. Proboscis not extending beyond the oral opening. Hind part of head with silvery-white scaly hairs, the collar composed of brownish-yellow hairs, becoming white below. The thorax has some yellow-brown scaly hairs, with long yellowish hairs on the shoulders and at the sides, and white ones at the base of wing and on the posterior half; the pubescence on the breast-sides consists of white hairs, with some yellow ones intermixed. Scutellum red, black at the base, with yellowish scaly hairs and white pubescence, bordered with black bristles. Abdomen blue-black, from the second segment onwards bordered laterally with red, with black pubescence and yellowish scaly hairs, the latter being thickest on the sides; on the anterior border of the second segment is a narrow band of white hairs and on the posterior margin of the last segment a yellowish white fringe of hairs; the hairs at the sides of the abdomen are whitish, thickest on the first two segments; some black hairs are intermixed on the last segments. Underside of abdomen red, with whitish pubescence. Legs red, all the coxæ, the anterior femora, the apex of the anterior tibiæ, and all the tarsi black; the pile on the legs is whitish.

Wings grey, with faint brown shading on the fore border, much fainter than that of *eluta*, Loew, not reaching beyond the second basal cell, from the apex of which it extends in a sloping line to the fore border where the auxiliary vein ends; veins brown, the base of the second longitudinal vein is just below the small cross-vein, the first posterior cell is somewhat narrowed at its opening, the second and third about equal in width. In the second male specimen the shading of the wing is fainter than in the type.

Length 9 millim.

Type (male), Pretoria (*W. L. D.*); type (female), Pretoria (*W. L. D.*).

The two females I believe to be the female of this species vary thus from the males:—The first two joints of the antennæ are reddish; the abdomen wholly black, with the exception of a square red mark on each side of the second

segment; the hairs at the sides of abdomen are not so thick and the band on the second segment not so distinct; the underside is red only at the base, then black, with white pubescence. Legs rather darker.

This species is nearly allied to *Exoprosopa indecisa*, ♂, Walker, the single specimen of which (the type) is in the British Museum collection.

Exoprosopa unifasciata, sp. n.

Type (female), from Pretoria (W. L. D.).

Black, with reddish face, antennæ, legs, and scutellum.

Face red, black beneath, the antennæ with black pubescence and traces of yellow scaly hairs; the forehead black, with yellow scaly hairs and black pubescence. Antennæ reddish, the first two joints with black pubescence. Hind part of head with greyish scaly hairs; the collar consists of yellowish-brown hairs. Thorax with yellowish scaly hairs and yellow hairs at the sides; black bristles and black hairs at the base of wings. Breast-sides with sparse yellow and black pubescence. Scutellum red, black at the extreme base, bordered with black bristles and with greyish tomentum. Abdomen black, with a band of white hairs on the anterior border of the second segment, traces of white scaly hairs on the sides of the other segments and on their posterior borders; pubescence black, and at the sides of abdomen, except the first segment, where it is white; there is a trace of a red spot on the side of the second segment; underside black, shining, with greyish pubescence on the basal half only. Legs reddish brown, with black pubescence and bristles.

Wings grey, with dark brown shading on the fore border not quite reaching the junction of the auxiliary vein with the border, extending to the second basal cell, but so faint in that cell that the cross-veins enclosing it seem spotted, the dark shading round them being very conspicuous, so that the wing at first sight might belong to Division G of Loew. The discal cell is almost clear except at its base and along its anterior side bordered by the fourth longitudinal vein; the base of the second longitudinal vein is just below the small cross-vein; the first posterior cell is somewhat narrowed at its opening, the second and third about equal in width.

Length $10\frac{1}{2}$ millim.

C. Wings with a black cross-band which extends to the hind border, and unites on the fore border with the extended dark shading of the base of the wing.

b. The edges of the cross-band with sharp indentations (proboscis elongated).

Exoprosopa macroptera, Loew, Dipt. Südafrik. p. 230, tab. ii. fig. 29 (1860).

One female from Pretoria (*W. L. D.*).

The first two joints of the antennæ are red, not black-brown as in the type described by Loew; the red-brown colour mentioned by him as occurring on the breast and base of underside of abdomen is not apparent in this specimen, and there is none on the upperside of abdomen; the white line on the hind border of the first segment in the type is here on the fore border of the second segment; a tuft of white hairs on the lower part of the thorax above the base of the wings is very noticeable in this specimen.

One male from Pretoria (*W. L. D.*).

Similar to the above, but it has reddish spots on the sides of the second and third segments, and the face is darker than in the female.

Exoprosopa nyasæ, sp. n.

Four males and two females from Fort Johnston, Nyasaland (*Rendall*).

Red, with a black dorsal line on the abdomen.

Face yellowish brown, with black pubescence and whitish scaly hairs. Antennæ with black hairs on the first two joints, which are red; the third joint brown; the bristle is stout and enlarged at the point, and longer than the third joint. Proboscis not quite so long as the fore femora and tibiæ together. Hind part of head red, darker in the centre, with white scaly hairs bordering the eyes. The collar is composed of yellow-brown hairs, with a few black ones intermixed. Thorax brown, with black pubescence and bristles and yellowish scaly hairs; the pubescence on the sides, the breast, and above the halteres consists of yellow-brown hairs and a few black ones, and a white tuft above the base of the wings. Scutellum reddish, black at the base. Abdomen bright red, with the first segment black, and a dorsal black stripe, consisting of triangular spots with their bases on the fore borders and their apices on the hind borders of the segments, diminishing in size and extending from the second to the sixth segment, becoming fainter on the last two; the last segment

is wholly red; there is a short line of white scaly hairs on the posterior border of the first segment, and on the anterior border of the second, and an oblong spot of thick white scaly hairs on the posterior border of the third segment; the last two segments are more or less covered with white scaly hairs; the pubescence on the dorsum of abdomen consists of short black hairs; on the sides the hairs are white on the first segment and black on all the others. Underside of abdomen red, the dorsal black stripe faintly marked, the pubescence black, with white pile. Legs red, with black pubescence and bristles.

The shading of the wings is allied to that of *E. macroptera*, but the band on attaining the margin only borders it for a short distance, from the junction of the vein dividing the second and third posterior cell to half the width of the latter (in one of the specimens it extends through three quarters of the width of the cell and above its junction with the second posterior); on its upper border it does not extend so high, not reaching the base of the anterior fork of the third vein; when it reaches the second longitudinal vein it makes a sharp turn and follows the bend of the second longitudinal vein to where it ends in the border of wing, extending a little beyond it, and entirely filling up the space enclosed by the vein; the colouring of the shading is brown and the veins brown; the vein dividing the second and third posterior cell is curved more at its upper than its lower end, differing in this from *macroptera*.

Length 13 millim.

Types (male and female), Fort Johnston, Nyasaland (*Rendall*).

The female is similar to the male, with the exception of the abdomen, which is darker; from the fourth segment the black colour entirely predominates; the scaly hairs are yellow and more abundant; the underside is red, with yellowish pubescence, only a few black hairs being intermixed, and the scaly hairs are yellow.

Length 12 millim.

Exoprosopa basalis, sp. n.

Type (male), from Figtree Creek, Barberton (*Rendall*), resembles the above species, but the wing is different, nearly the same as that of *E. macroptera*, and the abdomen is redder.

Abdomen with the first segment red at the sides, the black triangular spots do not extend beyond the fifth

segment; the underside is entirely red with light yellow pubescence, and black hairs at the apex. The wing differs from *E. macroptera* in the following particulars:—The base is almost entirely clear, only dark at its root, the dark part divided from it distinctly by its straight transverse border, on its upper border where it meets the clear part it does not form an S-shaped line, but a straight one across, not reaching beyond the base of the third posterior cell; the dividing vein between the first and second submarginal cells is formed with a sharp angle in its centre; the shading is brown and the veins brown.

Length 13 millim.

D. Wings with a black cross-band which does not reach the hind border, but unites on the fore border with the extended dark shading of the wing.

a. The cross-band simple.

Exoprosopa ignava, Loew, Dipt. Südafrik. p. 232, tab. ii. fig. 31 (1860).

Ten females from Pretoria (*W. L. D.*); Barberton (*W. L. D.*); Warm Baths, Waterberg.

The stump of the vein emitted into the discal cell is very variable, in some of the specimens not being present at all, or only on one wing, and when present it varies in position. The proboscis, in one specimen at least, is as long as in the figure of *Exoprosopa (Litorhynchus) hamatus* (Macq., Dipt. Exot. ii. p. 79, pl. xv. fig. 2), but is identical in all other respects with the others of the series: see Loew, *l. c.* pp. 223 & 232, on the length of the proboscis, which he does not consider a trustworthy specific character.

Exoprosopa elongata, sp. n.

Two males from Pretoria; one female from Namaqualand (*Cochrane*).

Black, face with the part bordering the mouth yellow; the underside of abdomen dull yellow-brown, the greater part of the scutellum dull red.

Face dull black, with black pubescence and whitish scaly hairs; the antennæ black, the underpart of the third joint yellowish, the third joint nearly as long as the two preceding ones together, the bristle stout, little more than half as long as the third joint. Proboscis not extending beyond the mouth. Hind part of the head with white scaly hairs bordering the eyes, the collar of bright orange-yellow hairs;

the pubescence on the sides of the thorax, on the breast, and before the halteres almost wholly yellow; there are a few black hairs on the centre of the breast and on the sides of the thorax above the yellow ones. Thorax with black pubescence and some yellow scaly hairs. Scutellum black at base, on the fore border dull red with black pubescence. Sides of abdomen with white hairs on the first, and anterior border of the second, segment, black on the others. The pubescence on the abdomen is black, with white scaly hairs on the sides of the segments from the second to the sixth, there are red spots to be seen on the second and third where the hairs seem rubbed off; underside dull yellow-brown, darker at the apex, with long yellow hairs on the anterior, and black ones on the posterior, segments, and yellow scaly hairs on the basal half. Legs black, with long black pubescence on the anterior coxæ. Wings similar to those of *E. morosa*, Loew (*l. c.* tab. ii. fig. 30), except in the following particulars:—There is no stump of a vein projecting into the discal cell; the small cross-vein is in the middle of the discal cell and the base of the second longitudinal vein is just opposite it; the second, third, and fourth posterior cells are about equal in width at their openings; the dark shading from the base extends higher up well over the base of the third posterior cell, the clear spot in the second basal cell is large and nearly square.

Length 12 millim.

Types, male, Pretoria (*W. L. D.*); female, Namaqualand (*Cochrane*).

The female is in poor preservation; the underside of the abdomen is black, with long yellow hairs on the basal half and black ones on the apex.

b. The cross-band divided into two parts posteriorly.

Exoprosopa hirtipes, Loew, Dipt. Südafrik. p. 233, tab. ii. fig. 32 (1860).

One female from Durban (*W. L. D.*).

E. Wings with a faint, extremely imperfect, and indistinct band which resolves itself into a dark shading of the cross-veins, on the fore border it unites with the extended dark shading of the base of the wings.

Exoprosopa dux, Wiedem., Auss. zweifl. Ins. i. p. 269 (1828); Loew, Dipt. Südafrik. p. 235 (1860).

One male from Pretoria.

Loew's remark no. 2 (*l. c.* p. 235), concerning the erroneous description of the bands of the abdomen of *E. heros* by Wiedemann, also applies to this species, which Loew suggests may be only a variety of *E. heros*, from which it differs in the lesser shading of the wing, which hardly extends into the anal cell.

- G. Wings with dark shading on the fore border and through dark shading of the cross-veins (not the longitudinal veins also) more or less spotted.

Exoprosopa major, sp. n.

Type (female) from Fort Johnston, Nyasaland (*Rendall*).

Black, scutellum and posterior borders of abdomen dull red.

Face with black pubescence and yellow scaly hairs. Antennæ black: the third joint a little longer than the first, the second short, the bristle stout, as long as the third joint. Hind part of head with white scaly hairs bordering the eyes on the sides, yellow in the centre. Collar composed of yellow hairs. The pubescence on the sides of the thorax, on the breast, and above the halteres yellow, with a few black hairs above the yellow on sides of thorax: bristles of thorax black. Thorax with some short black pubescence and some yellow scaly hairs. Scutellum dull red, black at the base and in the centre. Abdomen dull black, the posterior borders of segments from the third one red, on the sides of the second and third are red spots: the pubescence black, with yellow scaly hairs on the sides of all the segments and some long yellow hairs on the first two segments; the sides of abdomen with light yellow hairs on the first and on the anterior border of the second and third segments, black hairs intermixed with some yellow ones on the remaining segments; underside of abdomen black and red, with long light yellow pubescence. Legs black, the posterior ones with yellow scaly hairs.

Wings grey, the dark shading on the fore border is yellowish brown in colour, extending along the first longitudinal vein to its junction with the border, and on its inner side from the base of the second longitudinal vein almost to where the cross-vein of the submarginal cell joins the latter vein; at the base it fills the first basal cell; only the cross-vein at the base of the fourth posterior cell and the first part of the vein at the base of the third posterior cell, with the one dividing the first basal cell from the first posterior cell, are shaded; the small cross-vein is in the

middle of the discal cell and the base of the second longitudinal is opposite it, the first posterior cell is slightly narrowed at its opening.

Length 17 millim.

I. Wings clear at base, the fore border with dark shading from which a dark band crosses the wing attaining the posterior border.

This species is distinguished by the wings, which apparently differ from any South African *Exoprosopa* species as yet described, and requires a new group in Loew's Division I., defined as above.

Exoprosopa nova, sp. n.

Two males from Fort Johnston, Nyasaland (*Rendall*); one female from Delagoa Bay (*Mrs. Monteiro*), in the British Museum Collection.

Black, with red on the sides and apex of abdomen, red scutellum, and reddish-yellow face.

Face red, light yellow round the mouth, pubescence black and yellow on the red parts, light yellow round the mouth, with bright yellow scaly hairs; forehead black on the vertex, with a narrow black stripe on each side bordering the eyes nearly as far as the antennæ, pubescence black. Antennæ black, the first two joints with black hairs; the bristle stout, as long as the third joint. Hind part of head with yellow scaly hairs. Collar of bright yellow hairs. The sides of thorax and above the halteres with yellow pubescence and a few black hairs above; breast with paler yellow hairs. Thorax blackish brown, with yellow scaly hairs. Scutellum red, black at the base, with yellow scaly hairs and black bristles. Abdomen black, with red on the lateral borders of all the segments except the first, and with a narrow red band on the posterior borders, broader on the fifth and sixth, the seventh segment is wholly red; pubescence black, with some yellow scaly hairs, which are most noticeable on the sides and on the last two segments; sides of abdomen with yellow hairs on the first two segments, black on the remainder; underside red, with thick and fairly long white pubescence. Legs black, with yellow scaly hairs on the femora and tibiæ; pubescence and bristles black.

Wings grey, yellowish red at the extreme base and on the fore border, not quite reaching the junction of the first longitudinal vein in the border; the dark brown band extends in an oblique direction to the posterior border, filling the first third of the first posterior cell, nearly the half of the discal and fourth posterior cells, the base of the third posterior and

the upper half of the anal cell, the lower half of the latter and almost the whole of the second basal cell being clear; veins yellowish red on the basal half, and then brown; the small cross-vein is in the middle of the discal cell, and the base of the second longitudinal is below it, the first posterior cell is narrowed at its opening.

Length 14 millim.

Types, male, Fort Johnston; female, Delagoa Bay, in British Museum Collection.

The female differs slightly in the wing, but is evidently the same species. The pubescence on the first two joints of the antennæ is yellow on the underside; the red on the abdomen is not so marked, being chiefly on the second and third segments, the last two are black with the posterior borders red. The wings are paler in colour, the yellowish red becoming faint brown, and there is dark shading round the vein which divides the discal from the second posterior cell, not present in the male.

Length 13 millim.

Division II.—The discal cell with an angle, from which a branch is emitted into the third posterior cell.

Exoprosopa angulata, Loew, Dipt. Südafrik. p. 242 (1860).

One male from Cape Town.

Division III.—The discal cell with an angle, from which a vein is emitted which divides the third posterior cell into two cells.

Exoprosopa dubia, sp. n.

Four males and five females from Pretoria (*W. L. D.*).

The wing is very similar to that of *E. reticulata*, Loew. Black.

Face with black pubescence and white scaly hairs. Antennæ with black hairs on the first two joints; the bristle short and stout, barely half as long as the third joint. Hind part of head with some white scaly hairs. Collar composed of yellow hairs above, black beneath; the pubescence on the sides of the thorax and on the breast is black, with a few yellow hairs on the anterior part of the thorax, on the dorsum of the thorax it is black, with yellow scaly hairs forming a stripe on the extreme lateral margins. Scutellum with black bristles and some yellow scaly hairs. Abdomen with white hairs on the side of first segment, and black on the others; on the dorsum the white scaly hairs are chiefly on the sides of the segments, the last two are almost entirely

covered by them, and in some specimens there are a few scattered ones on the posterior borders of the middle segments; pubescence black: the underside is black with the posterior margins narrowly red, the pubescence consisting of long black hairs and some greyish tomentum. Legs black.

Wings dark brown, becoming lighter on the posterior border, with a light spot in the second basal cell; there is an irregular long, narrow, clear stripe in the centre of the discal and anal cells, the apex of the wing is quite clear; there are spots of darker shading on the anterior part of the vein between the first and second submarginal cells, on the root of the fore branch of the third longitudinal vein, on the upper part of the vein dividing the discal from the second posterior cell, a faint one on the base of the nerve between the second and third posterior cells, one at the base of the inner part of the third posterior cell, and one on the cross-vein dividing the second basal cell from the fourth posterior, one encloses the cross-vein between the third and fourth longitudinal veins, and one occurs at the base of the second longitudinal vein; in some of the specimens there is a faint spot on the end of the second longitudinal vein; veins brown, the small cross-vein is in the centre of the discal cell, and the root of the second longitudinal is just below it: the first posterior cell is half as wide as the second posterior at its opening, the third at its opening is only a little wider than the second and about the same width as the fourth.

Length 12 millim. Some of the specimens measure only 9 millim.

Types (male and female), Pretoria (*W. L. D.*).

The female type has an extra faint spot on the end of the upper branch of the third longitudinal vein, besides one on the end of the second longitudinal.

Length 9 millim.

HYPERALONIA.

Rondani, *Archiv. Zool. Canestr.* iii. p. 57 (1863); Osten Sacken, *Biol. Centr.-Am., Dipt.* i. pp. 78-80 (1886).

In this species a tooth at the base of the ungues on the posterior legs is present, as in *Exoprosopa*, so that the absence of these cannot be taken as a characteristic of the genus, as suggested by Osten Sacken in *Biol. Centr.-Am.*, where he remarks that no species from the Cape had yet been discovered.

Hyperalonia vittata, sp. n.

Three males and three females from Fort Johnston, Nyasaland (*Rendall*).

Allied to *H. rufa*, Wiedem., from S. Africa (Auss. zweifl. Ins. i. p. 291).

Reddish, with dark wings, the cross-veins shaded.

Face red, pale yellow round the mouth, with yellow scaly hairs and some black hairs above the mouth and between the antennæ; these last red, the third joint brown, the first two joints with short black pubescence; forehead darker, with yellow scaly hairs and black pubescence; palpi yellow. Hind part of head reddish, with short black pubescence and yellow scaly hairs. Thorax dull black, the posterior corners red, with orange-yellow pubescence on the sides and anterior margin and scattered fulvous pile on the dorsum with some black hairs, bristles at the sides black; breast-sides with yellow pubescence. Scutellum dull red, black at the extreme base; the pubescence black, and black bristles. Abdomen dull red, with a central black stripe, widest on the first segment and ending on the sixth, rather densely covered with fulvous pile and some black pubescence; the sides of the first three segments with thick yellow hairs, on the sides of the remaining segments a few black hairs: underside of abdomen red, with light yellow pubescence. Legs red, the last three joints of the posterior tarsi more or less black, all the tarsi of the anterior and middle legs black; on the red-coloured part with yellow pile and on the black part of legs with black pubescence; bristles black.

Wings brown, lighter at the apex and on the posterior border, all cross-veins shaded; the first posterior cell narrowed at its opening, the second a little narrower than the third, and the fourth widest of all; the anal cell narrowed.

Types (male and female), Fort Johnston, Nyasaland (*Rendall*).

The female has the dorsal black stripe on abdomen a little broader, the posterior border of the thorax is red and the wings a little lighter.

Length 15 millim. There is a great variation in size in this species, one of the males and two females measuring only $10\frac{1}{2}$ millim.

Nemestrinidæ.

(Hirmoneuridæ, Loew.)

Prosæca Westermanni, Wiedem., Dipt. Exot. i. p. 155 (1821);
id., Auss. zweifl. Ins. i. p. 247 (1828); Schiner, Reise
Novara, p. 113 (1866).

Nemestrina Westermanni, Wiedem., l. c.

Three males and one female from Barberton (*Harrison*,
Rendall) and Pretoria (*W. L. D.*).

? *Prosæca*, sp.

One male, antennæ wanting, from Barberton (*Harrison*).

NEMESTRINA sensu lato.

Two female specimens from "near Eureka, Barberton"
(*Rendall*), with two-jointed antennal bristle, which precludes
their inclusion in *Prosæca*, Schiner, and the shape of the
palpi, which are thick and apparently two-jointed, prevents
their being included in *Rhynchocephalus*, Fisher.

Cyrtidæ.

Psilodera fasciatus, Wiedem., Zool. Mag. iii. p. 14 (1819);
id., Auss. zweifl. Ins. ii. p. 14 (1828); Loew, Dipt. Süd-
afrik. p. 257 (1860).

Cyrtus fasciatus, Wiedem., l. c.

Psilodera fasciata, Erichson, Entomogr. p. 146.

Psilodera capensis, Gray, Griff. Anim. Kingd., Ins. xv. tab. 128. fig. 4;
Westwood, Trans. Ent. Soc. v. p. 92.

One male from Barberton (*Rendall*).

This agrees with Wiedemann's and Loew's descriptions,
but the third posterior cell is pedunculated; Loew expressly
states it is not, and that it is thus distinguished from *cingu-
lata*, Loew, and *bipunctata*, Wiedem.

A specimen labelled *fasciata* in the British Museum Col-
lection is identical with the above specimen, but has the cell
pedunculated; it seems probable that this is a character that
varies in this species.

Syritta?, sp. n.

One male from Pretoria (*W. L. D.*).

Allied to *S. flaviventris*, Macq., Dipt. Exot. ii. (2) p. 75,
and Schiner, Reise Novara, p. 367, but apparently distinct
from it; as Schiner states that Macquart's species possess no
tooth-like spines on the hind femora, and this specimen has
them.

Eristalis crassipes, Fabr., Syst. Antl. p. 137 (1805); Wiedem., Auss. zweifl. Ins. ii. p. 157 (1828); Macq., Dipt. Exot. ii. (2) p. 31, tab. 8. fig. 1 (1840); Loew, Dipt. Südafrik. p. 322 (1860); Peters's Reise, p. 16 (1862).

Simoides crassipes, Loew, Öfvers. af K. Vet.-Akad. Förhandl. 1857, p. 382.

Eristalis pachymerus, Wiedem., Zool. Mag. iii. p. 17.

Three females from Fort Johnston, Nyasaland (*Rendall*), and Barberton (*Rendall*).

Eristalis assimilis, Walker, List Dipt. pt. iii. p. 611 (1849).

Eristalis capito, Loew, Dipt. Südafrik. p. 321.

Five males from Pretoria (*W. L. D.*) and one male and one female from Fort Johnston, Nyasaland (*Rendall*).

These are exactly similar to Walker's type, and also agree exactly with the description of *E. capito* given by Loew, placed in his Div. I. group *b* (*Megaspis*). Walker's name must therefore take precedence, but Loew's description will hold good.

Eristalis curtus, Loew, Dipt. Südafrik. p. 319 (1860).

Two males and four females from Pretoria (*W. L. D.*); one male and one female from Fort Johnston, Nyasaland (*Rendall*).

Eristalis teniops, Wiedem., Zool. Mag. ii. p. 42 (1818); id. Auss. zweifl. Ins. ii. p. 182 (1828); Loew, Dipt. Südafrik. p. 324 (1860).

Helophilus pulchriceps, Mg., Syst. Beschr. iii. p. 375; Macq., Suites à Buff. i. p. 505.

Eristalis pulchriceps, Germar, Faun. xxiii. tab. 22.

Eristalis torridus, Wlk., List Dipt. iii. p. 612.

Eristalis aegyptius, Wlk., l. c. p. 621.

Three females from Barberton (*Rendall*) and Pretoria (*W. L. D.*).

Loew pointed out that *E. aegyptius*, Wlk., is identical with this species, and I believe the same to be the case with *E. torridus*, Wlk., on comparing the type in the British Museum Collection.

Plagiocera hamorrhoea, Gerst., Deeken's Reise, p. 391, pl. xvi. fig. 6 (1873).

Two females from Uganda (*Ansorge*) and Fort Johnston.

Asarkina salviæ, Fabr., Ent. Syst. iv. p. 306 (1794); Syst. Antl. p. 250 (1805); Loew, Dipt. Südafrik. p. 311 (1860); Verrall, Trans. Ent. Soc. Lond. 1898, p. 414.

One male from Durban (*W. L. D.*).

MUSCARIA SCHIZOMETOPA.

Group GONIIDÆ.

Brauer, Denk. Akad. Wiss. Wien, lvi. pt. i. p. 100 (1889),
lviii. pt. ii. p. 353 (1891).

Gonia bimaculata, Wiedem., Auss. zweifl. Ins. ii. p. 344 (1828).

Two specimens from Barberton (*Rendall*) and Pretoria (*W. L. D.*).

Pseudogonia nigra, Macq., Dipt. Exot. ii. p. 49 (1838).

Gonia nigra, Macq., *l. c.*

Gonia fasciata, nom. præocc., Wiedem., Auss. zweifl. Ins. ii. p. 344 (1828); Brauer, *op. cit.* lviii. pt. ii. p. 403 (1891).

One female from Pretoria (*W. L. D.*).

Group HYSTRICIDÆ.

Brauer, *op. cit.* lvi. pt. i. p. 132, lx. pt. iii. note 27 (1893).

Dejeania bombylans, Fabr., Ent. Syst., Suppl. p. 568 (1798); Coquebert, Illustr. Icon. Ins. 115, tab. xxv. fig. 16 (1799); Fabr., Syst. Antl. p. 281; Wiedem., Auss. zweifl. Ins. ii. p. 286; Macq., Dipt. Exot. ii. p. 34 (1840); see Karsch, Ent. Nachr. xii. p. 338 (1886).

Stomoxys bombylans, Fabr., *l. c.*

Tachina bombylans, Wiedem., *l. c.*

Dejeania capensis, Rob. Desv. Myodaires, p. 314 (1830).

Dejeania variabilis, Jaenicke, Abh. Senck. Gesell. vi. p. 393, pl. xlv. fig. 9.

Four specimens from Barberton (*Rendall*); Transvaal, Natal Frontier, Pretoria (*W. L. D.*).

Group SCHINERIA.

Brauer, *op. cit.* lvi. pt. i. p. 141 (1889).

One female with bright red abdomen from Barberton (*Rendall*) allied to *Paraphania diabolus*, Wiedem. (*Tachina*), Dipt. Exot. ii. p. 302, placed by Brauer in his genus *Paraphania*, but cannot be included in that genus, the palpi being somewhat different, and the first posterior cell is closed at

the border, not open as in *Paraphania*; there is no stump of a vein on the bend of the fourth longitudinal vein. It will apparently require a new genus.

Paraphania, Brauer, is now said to be identical with *Orectocera*, v. d. Wulp, in which it should be sunk.

Group SARCOPHAGIDÆ.

Brauer, *op. cit.* lvi. pt. i. p. 121, lviii. pt. ii. p. 413.

Sarcophoga? hæmorrhoidalis, Meig., Syst. Besch. v. p. 28 (1826); Karsch, Ent. Nachr. xii. p. 263 (1886); id. Berl. ent. Zeit. xxxi. p. 377 (1887).

One male and two females from Fort Johnston; three females from Pretoria (*W. L. D.*) and Kimberley (*H. W. Brown*).

Sarcophila, sp.

One male from Brak Kloof, Farm Marck, Cape Colony (*Mrs. G. White*).

SARCOPHAGINÆ, sp.

One male from Honey Nest Kloof, Cape Colony; one female from Fort Johnston, Nyasaland (*Rendall*).

Apparently one species; judging from the antennæ they would belong to this subfamily, but in other characteristics they appear more allied to the *Muscinae* and may perhaps require a new genus placed between the two subfamilies.

Group RHINIIDÆ.

Brauer, *op. cit.* lvi. pt. i. p. 154, lviii. pt. ii. p. 418.

Rhinia, sp.

One female allied to *R. cribrata*, Bigot, Ann. Soc. Ent. Fr. (5) iv. p. 239 (1874), from Pretoria (*W. L. D.*).

Group MUSCINÆ.

Brauer, *op. cit.* lvi. pt. i. p. 154.

Musca domestica, L.

One male from Fort Johnston, Nyasaland (*Rendall*); one female from Pienaars River (*W. L. D.*).

Calliphora marginalis, Wiedem., Auss. zweifl. Ins. ii. p. 395 (1828); Macq., Dipt. Exot. ii. p. 143 (1838); Karsch, Berl. ent. Zeit. xxxi. p. 377 (1887).

Lucilia marginalis, Wiedem., l. c.

Sonomyia marginalis, Rondani, Atti del Accademia di Bologna, anno 1862.

Three females from Pretoria (*W. L. D.*), Barberton (*Rendall*), and Fort Johnston, Nyasaland (*Rendall*).

This well-known species is now placed under *Calliphora* by Brauer, who divides this genus from *Lucilia* by the cheeks being hairy, not bare as in the latter genus, and the third longitudinal vein is spiny at the base, not as far as the cross-vein as in *Lucilia*.

Calliphora, sp.

One male and one female *in coitu*, allied to *Lucilia Barthii*, Jaennicke (Abh. Senek. Gesell. vi. p. 374), from Barberton (*Rendall*).

ÆSTRIDÆ.

AULACEPHALA.

Macq., Dipt. Exot. Suppl. 4, p. 167, tab. xv. fig. 6 (1850).

Aulacocephala, Gerst., Jahresb. 1855; id. Wiegmann, Arch. 1857, p. 131, id. Verh. z.-b. Gesell. 1863; Brauer, Monogr. Æstriden, Wien, 1863, p. 169; Denk. Akad. Wiss. Wien, lvi. pt. i. p. 158.

Aulacephala badia, Gerst., Verh. z.-b. Gesell. (1863); Brauer, l. c. p. 170.

One female from Fort Johnston, Nyasaland (*Rendall*).

MUSCIDÆ ACALYPTERA.

BROMOPHILA.

Loew, Monogr. Dipt. N. Amer. iii. p. 35 (1873).

Bromophila caffra, Macq., Dipt. Exot. Suppl. 1, p. 217, tab. xix. fig. 2 (1846).

Dichromyia caffra, Macq., l. c.

Scatophaga zamid, Walker, List Dipt. iv. p. 983 (1849).

Eight males and nine females from Rustenburg, Warm Baths, Waterberg; Fort Johnston, Nyasaland (*Rendall*); Pretoria (*W. L. D.*); Zomba (*Rendall*); Delagoa Bay.

Sepedon, ? sp. n.

One specimen from Pretoria (*W. L. D.*).

Bibionidæ.

Plecia dorsalis, Macq., Dipt. Exot. i. p. 86 (1838).

Three females from Pretoria (*W. L. D.*).

Hippoboscidæ.

Hippobosca rufipes, Olfers, De Veget. et Animat. corp. in corpor. animatis reperiundis, Berol. 1816, p. 101; Wiedem., Auss. zweifl. Ins. ii. p. 604 (1830); Schiner, Reise Novara, p. 372 (1866).

Hippobosca maculata, Macq., Suites à Buff. ii. p. 638.

Hippobosca Wahlenbergiana, Jaenicke, Abh. Senck. Gesell. vi. p. 406, pl. xlv. fig. 13.

Four specimens from Pretoria (*W. L. D.*) and Barberton (*Rendall*).

XVI.—*Descriptions of Brazilian Coccidæ.*

By ADOLPH HEMPEL, S Paulo, Brazil.

[Continued from vol. vi. p. 398.]

Genus PHENACOCCLUS, Cockerell.

Phenacoccus spiniferus, Hempel.

Adult female oval in form, not very convex; pinkish, both surfaces dusted with a white powder; about thirty-six short white tufts around the lateral margin; four anal tufts are slightly longer than the others.

Parasitized females become cylindrical in form and the derm becomes chitinized. The marginal tufts are slightly longer on the posterior margin than on the rest of the body.

Antennæ of nine joints, joint 3 the longest. Length of antennæ varying from .50 to .53 millim. Approximate formula: 3 (1 2) 9 7 8 6 (4 5). Length of the segments of the antennæ: (1) 67, (2) 67, (3) 71, (4) 42, (5) 42, (6) 45, (7) 53, (8) 49, (9) 64. All antennal segments bear hairs. Legs ordinary, not bearing many hairs. Length of segments of first pair of legs: femur, with trochanter, 292; tibia and tarsus 312. Claw short; digitules large, with expanded ends. Tarsal digitules hair-like, with buttoned ends. Eyes small, conical. Rostrum short, about as wide as long, bearing two hairs. Mentum dimerous, with